

This listing of the claims replaces any and all prior versions and listings of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A composition comprising a biologically active compound and a transport moiety, wherein the transport moiety comprises a structure selected from the group consisting of $(ZYZ)_nZ$, $(ZY)_nZ$, $(ZY)_mZ$, $(ZYY)_nZ$ and $(ZYYY)_nZ$, wherein each Z is L-arginine or D-arginine, and each Y is independently an amino acid that does not comprise an amidino or guanidino moiety, and wherein n is an integer of from 2 to 10 and m is an integer from 3 to 10.

2. (original) The composition according to claim 1, wherein each Y is independently selected from the group consisting of alanine, cysteine, aspartic acid, glutamic acid, phenylalanine, glycine, histidine, isoleucine, lysine, leucine, methionine, asparagine, proline, glutamine, serine, threonine, valine, tryptophan, hydroxyproline, tyrosine, γ -amino butyric acid, β -alanine, sarcosine and ϵ -amino caproic acid.

3. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZYZ)_nZ$, and wherein n is an integer ranging from 2 to 5.

4. (currently amended) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZY)_nZ$ $(ZY)_mZ$, and wherein $[[n\ m]]$ is an integer ranging from 4 to 10.

5. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZYY)_nZ$, and wherein n is an integer ranging from 4 to 10.

6. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZYYY)_nZ$, and wherein n is an integer ranging from 4 to 10.

7. (original) The composition according to claim 1, wherein the transport moiety is attached to the biologically active compound by a linking moiety to form a conjugate.

8. (withdrawn) The composition according to claim 1, wherein Y is a gene-encoded amino acid.

9. (original) The composition according to claim 1, wherein Y is an amino acid other than a gene-encoded amino acid.

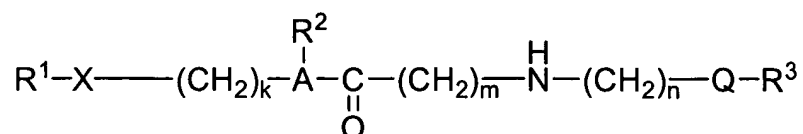
10. (withdrawn) The composition according to claim 3, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 3 or 4.

11. (currently amended) The composition according to claim 4, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and $[[n\ m]]$ is 6, 7 or 8.

12. (withdrawn) The composition according to claim 5, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 6, 7 or 8.

13. (withdrawn; previously presented) The composition according to claim 6, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 6, 7 or 8.

14. (withdrawn; previously presented) The composition according to claim 7, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

A is N or CH;

R^2 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^3 is the transport moiety;

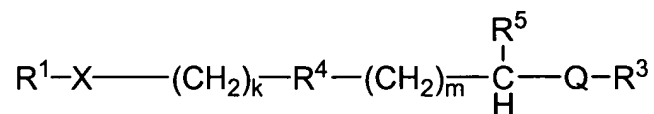
k and m are independently either 1 or 2; and

n is an integer of from 1 to 10.

15. (withdrawn; previously presented) The composition according to claim 14, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH-, -S-S-, -C(S)O-, -C(S)NH-, -NHC(O)NH-, -SO₂NH-, -SONH-, phosphate, phosphonate and phosphinate.

16. (withdrawn; previously presented) The composition according to claim 14, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH- and -NHC(O)NH-.

17. (previously presented) The composition according to claim 7, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound ;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

R³ is the transport moiety;

R⁴ is S, O, NR⁶ or CR⁷R⁸;

R⁵ is OH, SH, NHR⁶, or -CONH₂;

R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

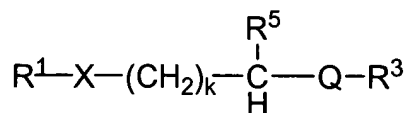
R⁷ and R⁸ are independently hydrogen, alkyl or arylalkyl; and

k and m are independently either 1 or 2.

18. (previously presented) The composition according to claim 17 wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH-, -S-S-, -C(S)O-, -C(S)NH-, -NHC(O)NH-, -SO₂NH-, -SONH-, phosphate, phosphonate and phosphinate.

19. (previously presented) The composition according to claim 17, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH- and -NHC(O)NH-.

20. (withdrawn; previously presented) The composition according to claim 7, wherein the conjugate has the following structure:



wherein:

R¹ is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

R³ is the transport moiety;

R^5 is H, OH, SH, NHR^6 , or $-CONH_2$;

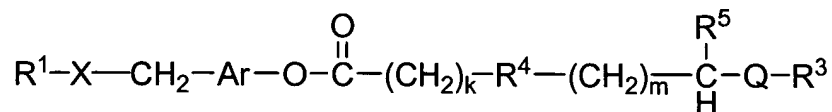
R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl; and

k is 1 or 2.

21. (withdrawn; previously presented) The composition according to claim 20, wherein each of X and Q is independently selected from the group consisting of $-C(O)O-$, $-O-C(O)-$, $-C(O)NH-$, $-NH-C(O)-$, $-OC(O)NH-$, $-S-S-$, $-C(S)O-$, $-C(S)NH-$, $-NHC(O)NH-$, $-SO_2NH-$, $-SONH-$, phosphate, phosphonate and phosphinate.

22. (withdrawn; previously presented) The composition according to claim 20, wherein each of X and Q is independently selected from the group consisting of $-C(O)O-$, $-O-C(O)-$, $-C(O)NH-$, $-NH-C(O)-$, $-OC(O)NH-$ and $-NHC(O)NH-$.

23. (withdrawn; previously presented) The composition according to claim 7, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

Ar is a substituted or unsubstituted aryl group, wherein the methylene and oxygen substituents are either *ortho* or *para* to one another;

R^3 is the transport moiety;

R^4 is S, O, NR^6 or CR^7R^8 ;

R^5 is H, OH, SH, $CONHR^6$ or NHR^6 ;
 R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;
 R^7 and R^8 are independently hydrogen or alkyl; and,
k and m are independently either 1 or 2.

24. (withdrawn; previously presented) The composition according to claim 23, wherein each of X and Q is independently selected from the group consisting of $-C(O)O-$, $-O-C(O)-$, $-C(O)NH-$, $-NH-C(O)-$, $-OC(O)NH-$, $-S-S-$, $-C(S)O-$, $-C(S)NH-$, $-NHC(O)NH-$, $-SO_2NH-$, $-SONH-$, phosphate, phosphonate and phosphinate.

25. (withdrawn; previously presented) The composition according to claim 23, wherein each of X and Q is independently selected from the group consisting of $-C(O)O-$, $-O-C(O)-$, $-C(O)NH-$, $-NH-C(O)-$, $-OC(O)NH-$ and $-NHC(O)NH-$.

26. (withdrawn; previously presented) The composition according to claim 16, wherein A is N, R^2 is benzyl, k, m and n are 1, and X is $-OC(O)-$.

27. (previously presented) The composition according to claim 19, wherein R^4 is S, R^5 is NHR^6 , R^6 is hydrogen, methyl, allyl, butyl or phenyl, k and m are 1 and X is $-OC(O)-$.

28. (withdrawn; previously presented) The composition according to claim 22, wherein R^5 is NHR^6 , R^6 is hydrogen, methyl, allyl, butyl or phenyl, k is 2 and X is $-OC(O)-$.

29. (withdrawn; previously presented) The composition according to claim 25, wherein Ar is an unsubstituted aryl group, R^4 is S, R^5 is NHR^6 , R^6 is hydrogen, methyl, allyl, butyl or phenyl, k and m are 1 and X is $-OC(O)-$.

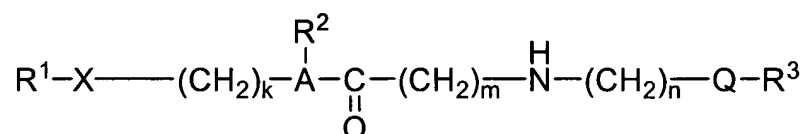
30. (withdrawn; currently amended) A method for increasing the transport of a biologically active compound across a biological membrane comprising:

administering a composition comprising a biologically active compound and a transport moiety, wherein the transport compound comprises a structure selected from the group consisting of $(ZYZ)_nZ$, ~~$(ZY)_nZ$~~ , $(ZY)_mZ$, $(ZYY)_nZ$ and $(ZYYY)_nZ$, wherein Z is L-arginine or D-arginine, and wherein Y is an amino acid that does not comprise an amidino or guanidino moiety, and wherein n is an integer ranging from 2 to 10 and m is an integer ranging from 3 to 10,

wherein transport of the biologically active compound across the biological membrane is increased relative to transport of the biologically active compound in the absence of said transport moiety.

31. (withdrawn; previously presented) The method according to claim 30, wherein the biologically active compound is attached to the transport moiety by a linking moiety to form a conjugate.

32. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound ;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

A is N or CH;

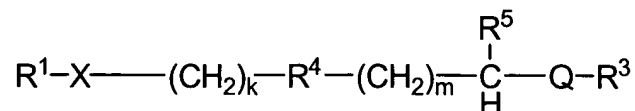
R^2 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^3 is a transport moiety;

k and m are independently either 1 or 2; and

n is an integer of from 1 to 10.

33. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound ;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

R^3 is a transport moiety;

R^4 is S, O, NR^6 or CR^7R^8 ;

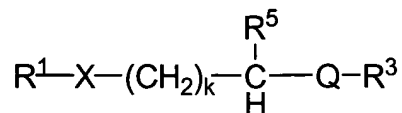
R^5 is OH, SH, NHR^6 , or $-CONH_2$;

R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^7 and R^8 are independently hydrogen, alkyl or arylalkyl; and

k and m are independently either 1 or 2.

34. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

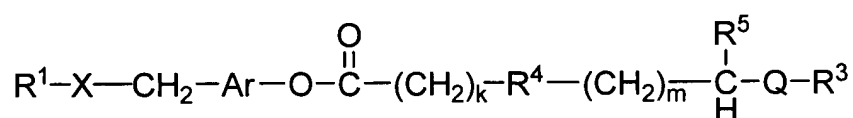
R^3 is the transport moiety;

R^5 is H, OH, SH, NHR^6 , or $-CONH_2$;

R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl; and

k is 1 or 2.

35. (withdrawn; previously presented) The method of claim 31, wherein the conjugate is of the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

Ar is a substituted or unsubstituted aryl group, wherein the methylene and oxygen substituents are either *ortho* or *para* to one another;

R^3 is the transport moiety;

R^4 is S, O, NR^6 or CR^7R^8 ;

R^5 is H, OH, SH, $CONHR^6$ or NHR^6 ;

R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^7 and R^8 are independently hydrogen or alkyl; and,

k and m are independently either 1 or 2.